

# Communicable Diseases Communiqué

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## Update– Novel influenza A(H1N1)

### South Africa

Novel influenza A (H1N1) infection was confirmed in a 12-year-old resident of the USA, who was visiting relatives in South Africa. The patient presented with an influenza-like illness whilst in transit in the USA en route to South Africa. He arrived in South Africa on 14 June 2009 and was admitted to hospital shortly thereafter. Novel influenza A (H1N1) was suspected, based on the case definition of 'an influenza-like illness plus travel from an area with community-wide transmission'. Specimens were submitted, appropriate isolation precautions were instituted and treatment with oseltamivir was commenced. Novel influenza A (H1N1) was confirmed at the National Institute for Communicable Diseases by PCR using the specific primers for this virus. The patient has recovered well, has since been discharged to 'home isolation', and contacts are being followed up.

Until such time that there is local community-wide transmission, the current case definition will continue to be used for active case finding to guide laboratory testing.

**Suspected case definition:** an individual with recent onset of fever  $\geq 38^{\circ}\text{C}$  **PLUS ONE OR MORE** of the following acute symptoms: sore throat, rhinorrhoea/nasal congestion, cough, myalgia and/or gastrointestinal symptoms, **AND** gives one or more of the following histories:

- Travel within **7 days** prior to onset of symptoms to countries with confirmed community-wide outbreaks.
- Close contact with an individual who is a suspected/confirmed case of novel influenza A (H1N1) in the 7 days prior to onset of symptoms for novel influenza A (H1N1).

### Global update

On the 11 June 2009, the WHO raised the level of influenza pandemic alert from phase 5 to phase 6.

This decision was based on available evidence and expert assessments, which proved that the scientific criteria for an influenza pandemic had been met, in terms of global spread of a new influenza virus strain.

Currently this pandemic is of moderate severity globally. The majority of patients experience mild symptoms and make a rapid and full recovery, often in the absence of any form of medical treatment. Overall, global levels of clinically severe or fatal cases of respiratory illness appear similar to levels seen during local seasonal influenza periods. In general, health care systems in most countries have been able to cope with the numbers of people seeking care. However, based on historical patterns, the severity of pandemics can change considerably over time and differ by location or population. Moreover, the virus may evolve and change its pathogenicity in the future.

Further international spread of the pandemic virus is expected to continue over the coming weeks and months. At this time the epidemiological situation among countries is highly variable, ranging from those with no or few cases to those experiencing widespread community outbreaks.

As of 18 June 2009, a total of 39 620 cases of novel influenza A (H1N1) infection, including 167 deaths, has been reported, spread over 81 countries. The majority of these are from the United States of America (n=17 855) including 27 deaths, followed by Mexico (n= 6 241) including 108 deaths, Canada (n=6 241) including 7 deaths, and Australia (n=2 112) with no deaths. See: [www.who.int](http://www.who.int) for a full update.

### Recommendations for response and control

It is recommended that countries institute the

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following measures:

- Surveillance and monitoring of the virus for important genetic, antigenic and functional changes e.g. antiviral drug sensitivity.
- Monitor the trends in disease presentation and outbreaks.
- Monitor the health care system to ensure continuity of services.
- Identify and investigate unusual cases, clusters or outbreaks to ensure that important changes in the epidemiology or severity of disease are identified early.
- Characterize in detail the clinical and epidemiological features of the first 100 or more cases of pandemic influenza in any new settings to ensure critical information is collected and disseminated widely.

Country responses should focus on the following:

- Revision of pre-existing national pandemic plans to ensure that actions taken for this pandemic are sustainable and appropriate for the current

severity of this pandemic.

- Ensure that national efforts focus primarily on mitigating the health and social impact of the virus through appropriate care of ill persons rather than on attempts to contain transmission of the disease.
- Prepare the health systems to manage higher volumes of cases, and potentially more serious cases of illness.
- Implement plans for obtaining essential medicines and equipment, as well as antivirals and vaccines.
- WHO continues to recommend no restrictions on travel and no border closures.

#### References

WHO: [http://www.who.int/csr/disease/swineflu/guidance/health\\_professionals/en/](http://www.who.int/csr/disease/swineflu/guidance/health_professionals/en/)

**Source:** Epidemiology Division, Respiratory Virus and Viral Diagnostics Units, NICD, and Ampath Laboratories

## Seasonal influenza update

Up to the first week in June, 2101 specimens have been received for respiratory virus isolation. The majority (1978/2101, 94%) were from active influenza surveillance programmes, including 633 from the Viral Watch sentinel influenza surveillance programme. The number of specimens submitted by Viral Watch centres rose from an average of 25 per week during April to 64 per week during May, and to 195 for the first week of June. A total of 390 influenza isolates have been made to date, the majority (379/390, 97%) being influenza A virus. Of

these, 257/379 (68%) have been further sub-typed as influenza A (H3N2). To date seasonal influenza cases have been confirmed from all provinces except the North West Province. Ages of patients with seasonal influenza ranged from 3 months to 82 years (median 21 years).

**Source:** Epidemiology Division, Respiratory Virus and Viral Diagnostics Units, NICD

## Cholera update

Only four new laboratory-confirmed cholera cases have been reported since the publication of the previous NICD Communiqué (Vol. 8, No. 5), bringing the total confirmed cases in South Africa to 1 188 for the period 1 November 2008 to 14 June 2009. This represents 9.3% of the 12 741 clinical cholera cases reported by health authorities (last updated in May 2009). Cholera has been confirmed from all

provinces in South Africa, with case frequencies gradually declining after the height of the epidemic observed in mid-January 2009 (Figure 1). The four most recent cases all presented to healthcare facilities within the Greater Sekhukhune District Municipality in Limpopo Province. The last confirmed cases within the four worst affected provinces had

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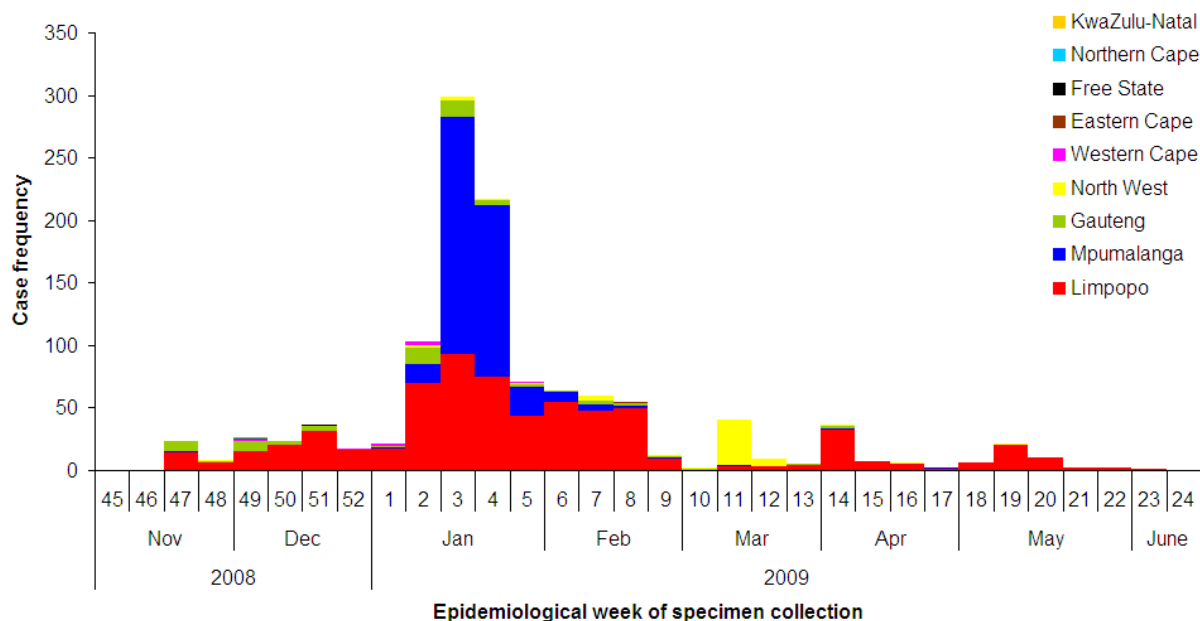
specimens collected on the following dates:

- Limpopo Province - 1 June 2009
- North West Province - 6 May 2009
- Mpumalanga Province - 23 April 2009
- Gauteng Province - 2 April 2009

The cholera outbreak is continuing within South Africa. Recent cases within Limpopo Province indicate continued local transmission of *Vibrio cholerae*. It is important for clinicians to remain suspicious of cholera in patients presenting with acute watery diarrhoea. All patients meeting the clinical case definition should have stool specimens collected and should be notified immediately to

health authorities. Furthermore, continued surveillance for clinical cases throughout the country is important for rapid detection and control, and to provide evidence to declare the outbreak over. An outbreak is generally declared over after at least two incubation periods have passed since the last laboratory-confirmed case was identified.

**Source:** Outbreak Response Unit, Enteric Diseases Reference Unit, SA-FELTP, NICD; Limpopo local and provincial Departments of Health; NHLS; Mpumalanga SD: Communicable Disease Control; Communicable Disease Control Directorates in all provinces, National Department of Health Communicable Disease Control.



Epidemiological weeks run from Monday through Sunday. Figure includes cases received on or before Friday 14 June 2009. Laboratory testing strategies have varied significantly over time and between provinces.

**Figure 1: Epidemic curve showing the frequency of laboratory-confirmed cholera cases by epidemiological week, 3 November 2008 (week 45) to 14 June 2009 (week 24), South Africa**

## Hepatitis A outbreak

An outbreak of hepatitis A has been reported from Pretoria North, Tshwane District, in Gauteng Province this month. Fourteen cases were initially reported by the Department of Health, of which ten were laboratory-confirmed. Control and prevention measures were immediately implemented, which included: environmental assessment to identify possible exposures, health promotion activities which emphasized good hygiene practices (including

hand washing), and administration of post-exposure prophylaxis using pooled immunoglobulin to close/household contacts.

Further investigation is ongoing and aims at establishing the extent and possible source of the outbreak. Activities include: surveillance for new and missed cases through active case finding,

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review of laboratory and health facility records, and patient and doctor interviews conducted telephonically or during site visits.

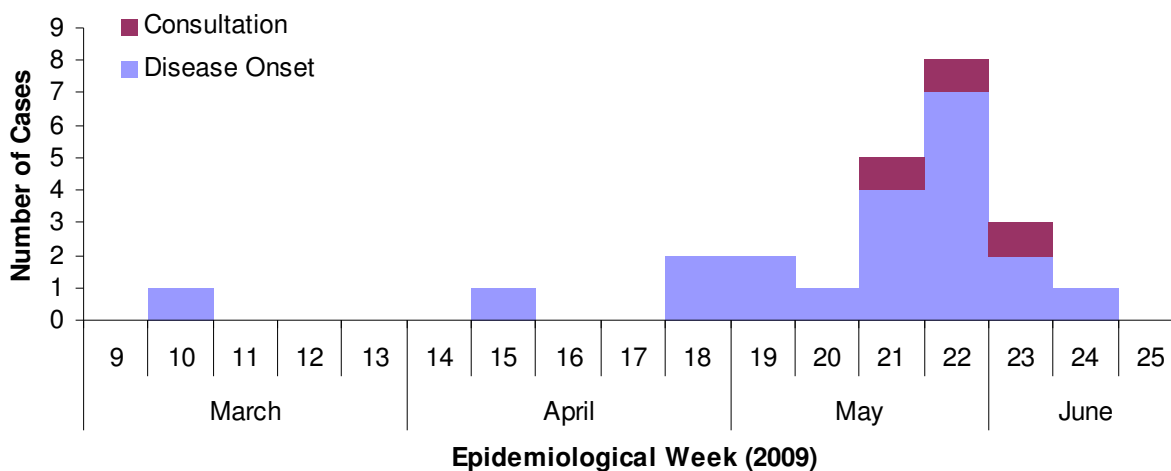
Preliminary results indicate that the first case of this cluster was notified on 11 May 2009, and additional cases continued to be notified (Figure 2). To date, a total of 24 cases who presented with illness over a period of three months, from 2 March 2009 to 8 June 2009 has been identified. Among these, 21 (88%) were laboratory-confirmed, and 3 (12%) were probable cases (i.e. presented with symptoms typical of hepatitis A and had an epidemiological link to a confirmed case). Of the 24 cases, 11 were children under the age of 18 years, and 13 were adults. Age ranged from 5 to 40 years (median age 20 years). Fourteen (58%) cases were female. Most cases (42%, n=10) were reported in the Pretoria North area, while (4%, n=1) were reported in Sinoville. Fifty percent (n=12) of the cases have a link to three schools and two crèches in the area, and a total of four household clusters were identified. Fifty percent (n=12) of the cases presented with jaundice.

The affected community is a formal but low-income area; however, the households reflected good hygiene and have access to municipal water.

Hepatitis A is a notifiable condition in South Africa. Infection may be asymptomatic, especially in children, and the likelihood of symptomatic disease increases with age. Symptomatic disease typically presents with jaundice, tiredness, stomach ache, loss of appetite or nausea. Due to the high proportion of mild and asymptomatic infection among cases, it is likely that the extent of the current outbreak is larger than documented here.

The hepatitis A virus is most commonly transmitted via the faecal-oral route from person-to-person. However, infection may also result from exposure to a common vehicle such as contaminated food or water. The epidemic curve would suggest both person-to-person spread and a common source exposure; however, investigations into this outbreak are ongoing.

**Source:** SA-FELTP, Outbreak Response Unit, NICD; Communicable Disease Directorate, Tshwane District and Gauteng Province



Epidemiological weeks run from Monday through Sunday. Figure includes cases detected on or before 17 June 2009.

**Figure 2: Epidemic curve showing the frequency of laboratory-confirmed and probable hepatitis A cases by epidemiological week of onset / consultation, Tshwane District, Gauteng Province, 1 March - 17 June**

## Hand, foot and mouth disease (HFMD) outbreak

During May 2009, the National Institute for Communicable Diseases (NICD) was informed about an outbreak of suspected hand foot and

mouth disease (HFMD) in one crèche in the Frances Baard District, Sol Plaatje Municipality, in Kimberley,

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Northern Cape Province. The first case presented with fever and vesicular rash on the buttocks on 17 May 2009, and cases increased in the following three days (Figure 3). Within a period of four days there had been a total of 11 cases mainly presenting with oral lesions and a vesicular rash on the hands.

An immediate investigation was conducted to describe and determine the extent of the outbreak, as well as to institute prevention and control measures. Fourteen crèches (six public and eight private) and one private clinic were visited. Fact sheets about symptoms, causes, treatment, and transmission of HFMD were distributed at those crèches. Prevention and control measures were instituted including health education by the investigating team. Questionnaires were developed and administered telephonically by the investigating team.

To date, a total of 13 cases that developed signs and symptoms associated with HFMD has been identified; some of these cases developed both a vesicular rash and oral lesions while some developed either a vesicular rash alone or only oral lesions. Cases were clinically diagnosed only as no laboratory specimens were taken. Of the 13 suspected HFMD cases, seven were female and six were male. Age ranged from one to five years (median of two years). The majority (n=6, 46%) of

cases were aged two years. Two household clusters were identified; each household had two cases. Further investigation, revealed that only two of the 13 cases wore nappies, and no cases were identified in those aged less than one year. All 13 cases have recovered; duration of symptoms lasted less than seven days in five of the eight cases interviewed.

Hand, foot and mouth disease is a viral disease that commonly affects infants and children. The most common strains causing HFMD are coxsackie A16 and enterovirus 71 (EV71). Early symptoms of the disease include fever, loss of appetite and sore throat. Painful vesicles develop in the mouth one to two days after fever onset. These lesions are commonly located on the tongue, gingivae or buccal mucosa (inner cheeks) and begin as small vesicles that may ulcerate. A non-pruritic rash with vesicle formation particularly on the palms of hands and soles of feet may also develop. Occasionally, rash may develop on the buttocks and/or genitalia. Infection is transmitted through direct contact with infectious virus. Infectious virus is found in nasal and throat secretions, saliva, vesicle fluid and stool of infected persons.

**Source:** Outbreak Response Unit, FELTP, NICD; Communicable Disease Directorate, Northern Cape Province Department of Health

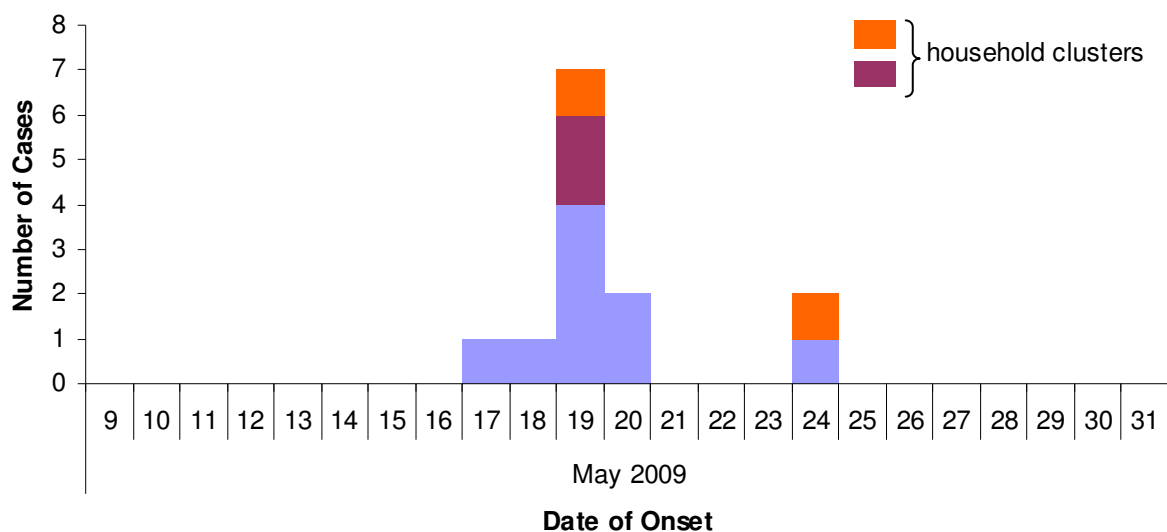


Figure 3: Epidemic curve showing the frequency of suspected cases of hand, foot and mouth disease (HFMD) by date of onset, Kimberley, Northern Cape Province, 9 - 31 May 2009

## Meningococcal disease

Sporadic cases of meningococcal disease continued to be reported across the country in keeping with trends in previous years. By the end of epidemiological week 23, a total of 139 laboratory-confirmed cases were reported to the Respiratory and Meningeal Pathogens Reference Unit (RMPRU), NICD (Table). These cases showed diversity in serogroups, which is in keeping with sporadic endemic disease in the country.

Serogroup data were available for 89/139 (64%) of cases. The predominant serogroup nationally for 2009 to date was serogroup W135 (48%, 43/89). The remaining serogroups included: A (0%), B

(29%, 26/83), C (18%, 16/89), and Y (4%, 4/89). The winter season is when we typically identify an increase in cases of meningococcal disease. As such, there should be a high index of suspicion for meningococcal disease which may present with non-specific early signs and symptoms. Disease typically has a rapid progression and should be managed as a medical emergency in order to reduce morbidity and mortality.

**Source:** Outbreak Response Unit, Respiratory and Meningeal Pathogens Reference Unit, NICD

**Table. Number of laboratory-confirmed meningococcal disease cases reported by week 23, 2008 and 2009, by province**

Province	2008	2009
Eastern Cape	8	13
Free State	6	3
Gauteng	78	67
KwaZulu-Natal	6	13
Limpopo	-*	-
Mpumalanga	14	9
Northern Cape	2	3
North West	2	4
Western Cape	22	27
<b>South Africa</b>	<b>138</b>	<b>139</b>

\*No cases reported

## Trypanosomiasis

Trypanosomiasis was confirmed in Johannesburg in a 69-year-old American traveller one week after returning from the Serengeti Game Park, Tanzania, where he experienced multiple tsetse fly bites. He presented with fever, chills and headache and was noted to have numerous discrete erythematous skin lesions, some with black 'scabs'. Initial malaria smears were negative; tick bite fever was considered on the basis of the clinical picture, skin lesions and an apparent initial response to doxycycline.

Three days post-admission, trypomastigotes were noted on a peripheral blood smear and this

coincided with a rapid clinical and clinico-pathological deterioration with the development of marked jaundice and liver dysfunction (total bilirubin 351IU/L, conjugated bilirubin 248 IU/L, AST 288 IU/L, ALT 138 IU/L) profound thrombocytopenia (platelet count  $6 \times 10^9/L$ ) with oozing from the insertion site of the intravenous catheter, renal dysfunction, and progressive deterioration in central nervous function with confusion and agitation. There was no evidence of myocarditis. Suramin therapy was commenced as per protocol for management of the haemolympathic stage of East African Trypanosomiasis (EAT).

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Examination of the cerebrospinal fluid revealed the presence of 15 neutrophils/ $\mu$ l and protein level of 0.7g/L, but no trypanosomes. Although there was clinical and laboratory evidence of possible meningoencephalitis, the decision was made to continue treatment with suramin, to continue supportive care and to improve the patient's general condition. A repeat lumbar puncture was planned to assess the trend, as the CNS clinical picture could be attributed to systemic pathology and the initial CSF findings were inconclusive.

Melarsoprol is the drug of choice for treatment of the meningoencephalitis-associated EAT, but its use has a significant incidence of drug-associated encephalopathy in up to 15% of patients, and up to 50% of these may have a fatal outcome. The diagnosis of CNS trypanosomiasis is based on the presence of trypomastigotes in the CSF, with or

without evidence of an inflammatory infiltrate, and typically a raised protein. While the presence of trypanosomes in the CSF always indicates CNS involvement, the degree of inflammatory infiltrate and white cells is variable. It is important that CSF is examined as soon as possible after lumbar puncture and that it is concentrated optimally for microscopy, preferably by a double centrifugation method.

The patient subsequently responded very well to suramin and all organ dysfunction has resolved. A repeat CSF examination showed a raised protein of 1.2 g/L, and absence of white cells and trypanosomes. The patient will complete the suramin course and a repeat CSF sample will be examined at a later stage.

**Source:** Epidemiology Division and Parasitology Unit, NICD

## Viral haemorrhagic fever (VHF)

There have been no new cases of VHF diagnosed in South Africa in the past month. To date in 2009, there has been one laboratory-confirmed case of Crimean-Congo haemorrhagic fever (CCHF) in South Africa.

Herpes hepatitis was confirmed by PCR as the cause of fever, bleeding and multi-organ failure in a 55-year-old man in Kwazulu-Natal Province. He was a baker, resident in Durban, with no co-morbid illness, and no history of travel or exposures compatible with a VHF. The patient presented with an acute febrile illness with rapid deterioration and development of ARDS, renal failure, profound leucopenia (WCC  $0.9 \times 10^9/L$ ) and thrombocytopenia (platelets  $44 \times 10^9/L$ ) and severe liver dysfunction (AST 4265 IU/L, ALT 1721 IU/L). Initial tests for hepatitis A and B were negative, and a VHF was unlikely because of the absence of a suggestive

epidemiological history. Herpes hepatitis was considered on the basis of a compatible clinical picture and laboratory findings, in particular the significant rise in transaminases. Acyclovir was added to his treatment but he died. Herpes simplex virus (HSV) PCR was found positive for the variant HSV.

This variant HSV strain has been previously identified in a number of similar cases presenting to the NICD as suspected cases of VHF. The majority of these patients have been apparently immunocompetent. Skin lesions have been absent, multi-organ failure with ARDS, leucopaenia, thrombocytopenia and marked elevations in transaminases and LDH have been typical features and the outcome has been invariably fatal.

**Source:** Epidemiology Division and Special Pathogens Division, NICD; Bouwer and Partners, KZN

## Rabies update

No additional cases of human rabies were confirmed in the last month. A total of 8 human rabies cases has been laboratory-confirmed to date this year, with cases from the Eastern Cape (n=4); KwaZulu-Natal (n=3) and Limpopo (n=1) Provinces.

**Source:** Epidemiology Division and Special Pathogens Unit, NICD

## Beyond Our Borders: infectious disease risks for travellers

The "Beyond Our Borders" column focuses on selected and current international disease risks that may affect South Africans travelling abroad. This issue reflects selected disease events from 19 May 2009 to 14 June 2009.

Disease	Countries	Comments	Advice to travellers
Dengue Fever	Mauritius, Caribbean, Central America, and South Central Asia	100 suspect cases of dengue fever have been detected in Mauritius. Serology tests showed 8 of 10 specimen received by NICD to be positive for anti-dengue virus IgM and all IgG positive, indicating recent infections and confirming the outbreak. (Source: Special Pathogens, NICD) Among the worst outbreak affected countries within other regions include: Brazil (226 500 cases), Bolivia (59 900 cases), Argentina (25 000 cases), and Malaysia (19 200 cases) and Australia (993 cases).	Dengue fever is the most common cause of fever in travellers returning from these areas. The mosquitoes responsible for transmission commonly breed within households and are most active during the day. Travellers should take precautionary measures to avoid bites: use insect repellents (containing 30-50% DEET), wear light-coloured clothing, and use insecticide-treated bed nets.
Mumps	United Kingdom including England and Wales	Almost 1700 cases have been reported in the last three months from England and Wales.	Mumps virus is spread through direct contact with respiratory secretions or saliva or through contact with contaminated fomites. Symptoms typically begin with a headache and fever prior to a characteristic swelling of the glands in the neck; however, 30% do not develop obvious signs. The mumps vaccine, which is contained in the MMR (measles, mumps, and rubella) vaccine, can prevent disease.
Measles	Wales, Russia, Bosnia and Bulgaria	Outbreaks have recently been reported in Bosnia (126 cases, primarily 15 to 19 years of age), Wales (200 cases) and Bulgaria (17 cases).	Measles is an acute rash illness due to a virus transmitted by direct contact with infectious droplets or, less commonly, by airborne spread. Measles is vaccine-preventable and travellers should ensure that they are up to date with all routine immunisations. There is no specific antiviral therapy, and treatment is supportive (hydration and antipyretics) and is aimed at managing complications (e.g. pneumonia). Vitamin A supplementation improves the outcome of measles in children.
Hand Foot & Mouth Disease (HFMD)	Asia, including China, Hong Kong, Singapore, and Taiwan	Outbreaks of HFMD have been reported across Asia. China and Singapore are among the worst affected countries, reporting 54 713 cases and 5 471 cases respectively this year (to 11 April 2009).	There is no vaccine available to prevent HFMD, and management of disease focuses on the treatment of symptoms (esp. fever). Travellers to countries currently experiencing outbreaks are advised to wash hands often with soap and water, especially before eating, after coughing or sneezing and after going to the bathroom. Consider packing and regularly using an alcohol-based hand gel (min 60% alcohol). Avoid sharing eating utensils / cups.
Cholera	Zimbabwe	The cholera outbreak in Zimbabwe is ongoing. As of 8 June 2009, 98 522 suspected cases and 4,282 deaths have been reported in the country. The capital city of Harare, Mashonaland West and Manicaland are among the worst affected areas.	Travellers are advised to drink water that is bottled or bring it to a rolling boil for at least 1 minute. Bottled carbonated water is safer than uncarbonated water. Avoid products made from contaminated water (e.g. ice and ice-cream). Eat only foods that have been thoroughly cooked. Peel fruit and vegetables yourself after washing hands (do not eat peelings), and avoid those that cannot be peeled. Avoid food and beverages from street vendors.

**Source:** Travel Health Unit, Outbreak Response Unit, SA-FELTP, Epidemiology Division; Special Pathogens Unit, NICD; Public Health Registrars, University of Pretoria. **References:** ProMED-Mail ([www.promedmail.org](http://www.promedmail.org)), World Health Organization ([www.who.int](http://www.who.int)), Centres for Disease Prevention and Control ([www.cdc.gov](http://www.cdc.gov)), Europe Media Monitor (<http://medusa.jrc.it/medisys/helsinkiedition/en/home.html>); last accessed 14 June 2009.

*This communiqué is published by the National Institute for Communicable Diseases (NICD) on a monthly basis for the purpose of providing up-to-date information on communicable diseases in South Africa. Much of the information is therefore preliminary and should not be cited or utilised for publication.*

